

Comm:

TOBACCO INDUSTRY RESEARCH COMMITTEE

Drs. Little, Chm.

Lynch

Jacobson

Kotin

150 East Forty Second Street

New York 17, N.Y.

Activated: 11/1/58

Renewed: 11/1/59

Application for Research Grant

Date: August 9, 1960

1. Name of Investigator: Donald M. Pace, Ph.D.
2. Title: Professor of Physiology
3. Institution & Address: University of Nebraska
Lincoln, Nebraska
4. Project or Subject: A continuation of investigations into the effects of certain constituents of tobacco smoke on tissue cells cultivated in vitro, especially human lung and skin cells.

5. Detailed Plan of Procedure: The same procedure as given in the previous application will be followed. Quantitative replicate cell culture techniques will be employed to study the effect of various constituents of cigarette smoke upon several cell strains. Emphasis will be placed upon long term exposure of the cells to sub-lethal concentrations of the various constituents.

A strain of human lung epithelial cells has been adapted to our replicate culture technique. Efforts will be made to clone this cell line. This should be of considerable usefulness in tobacco research.

Attempts will also be made to adapt a special technique devised for air pollution research in our laboratory so that replicate cell cultures may be directly exposed to whole tobacco smoke.

6. Budget Plan:

Salaries	\$ 8,000
Expendable Supplies	1,400
Permanent Equipment	
Overhead (8%)	800
Other	600
Total	\$10,800

7. Anticipated Duration of Work: One year (or more).

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8. Facilities and Staff Available: The Institute for Cellular Research consists of a suite of 8 rooms well equipped for both long term and short term tissue culture procedures. In addition to a director of research, there are two research associates, several research assistants and technicians. The staff is at present supported by research grants and University funds. This request would support one investigator and a part-time assistant.

9. Additional Requirements: No major additional requirements are anticipated. It should be pointed out that our cell culture methods employ a chemically defined medium supplemented with small amounts of horse serum. Such media contains rather expensive chemicals. The \$1400.00 listed for expendable supplies would be used for such purchases. Special glassware, if needed, would also be purchased from this category.

10. Additional Information (Including relation of work to other projects and other sources of supply):

There are other research projects in our laboratory which should complement and supplement the work in the tobacco research area. Air pollution research projects have included studies employing NO₂, SO₂, ozone, hydrocarbon vapors, and combinations of these single constituents. Several publications in this area are in preparation and should appear in the literature soon.

An earlier investigation for T.I.R.C. using acetaldehyde has been completed and has been reported in CANCER RESEARCH, V. 20, No. 6, 1960 under the title "Studies on the Effects of Acetaldehyde on Tissue Cells Cultivated in Vitro" by D. M. Pace and Alice Elliott.

Investigations have been undertaken but as yet are incomplete on such tobacco constituents as: Formaldehyde, acetone, toluene, and methanol. The sodium salts of steam volatile fatty acids, such as formate, acetate, butyrate, valerate and caprate are also being tested. These experiments have not been completed but are mentioned to indicate the numbers of smoke constituents currently being studied.

/s/ Donald M. Pace
Director of Project

/s/ John K. Selleck?
President
University of Nebraska Foundation

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